



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Alfred Ludwig HEINZ et al

Serial No.: 09/876,233

Examiner: J. Combs-Morillo

Filed: June 8, 2001

Art Unit: 1742

For: DAMAGE TOLERANT ALUMINIUM ALLOY PRODUCT AND METHOD OF ITS
MANUFACTURE

REQUEST FOR RECONSIDERATION

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office action mailed January 14, 2004, and together with a Petition for an Extension of Time, please consider the following remarks.

Claims 1-42 are pending. Claims 18-27, 31, 32 and 34 are withdrawn from consideration as being drawn to a non-elected invention.

Claim Rejections – 35 USC § 103

Claims 1-23, 37, and 39-47 are rejected as obvious over ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials (ASM Vol. 2) alone or with ASM Handbook: Vol. 9 Metallography and Microstructures (ASM Vol. 9).

The Office action asserts there is overlap between the compositions and YS(L) of present Claims 1 and 39 and alloy 2024, and asserts grain size, YS (LT) and $K_{c(a0)}$ recited by the claims are not disclosed by ASM 2 but would be inherent in view of the composition overlap.

The Office action also asserts there is overlap between the compositions, YS(L) and YS(LT) of present Claims 1 and 39 and alloy 2124, and asserts grain size and $K_{c(a0)}$ recited by the claims are not disclosed by ASM Vol. 2 but would be inherent in view of the composition overlap.

It is respectfully submitted the concurrently filed Declaration of Rinze Benedictus

explains why the alloys cited by the Office action would not have the presently claimed combination of properties.

In particular, data comparing a sample of the present alloy and prior art alloy 2024 in a T351 temper showed the present alloy had superior $K_{C(ao)}$, a measure for the toughness.

Likewise, data comparing prior art alloy 2024 in T3 and T8 tempers indicates the 2124 alloy in T851 temper of ASM Vol. 2 would not have the presently claimed properties.

Also, the Declaration explains ASM Vol. 9 does not show samples having small grains as presently claimed. For example, Fig. 46 (as referenced by the Office action) shows and mentions in the description below this figure: "fragmented grain structure. "There is only one small recrystallised grain" visible; all other grains are not visible, mainly because it is a structure with limited strain and recrystallisation. This means the structure is not recrystallised and you cannot see the grains. The very small structure that is visible is the sub-grain structure formed by dislocation networks within the grains. With the etching method applied for this micrograph it is virtually impossible to determine the grain structure. The etching is intended to develop the sub-grain structure. The single grain that can be seen in this micrograph may or may not be smaller than ASTM 6. However, drawing a conclusion from one single grain to an average grain size as mentioned in the present claim is virtually impossible.

A method for determining grain size is presented by ASTM E 112-96, Standard Test Methods for Determining Average Grain Size (1996), a copy of which was submitted with a March 10, 2003 response to a prior Office action.

Likewise one cannot determine the grain aspect ratio from these cited figures.

Thus, the rejection of Claims 1 and 39 are overcome. Hence, these claims and their dependent claims distinguish over the cited references.

Identical Alloy Chemical Compositions Do Not Necessitate Identical Properties

Page 4 of the Office Action states, "products of identical chemical composition can not have mutually exclusive properties." It is respectfully submitted in the alloy art this is not necessarily correct. Fig. 41 taken from an aluminium metallurgy textbook published by the American Society For Metals shows changing the temper of a 2024 alloy changes its properties (ATTACHMENT I to

the concurrently filed Rule 132 Declaration). Thus, applicant traverses the rejection of dependent claims 6-10, 43 and 44.

Claims 40 and 41 regarding T3 or T351 temper further distinguish over the references. The data in the concurrently filed Rule 132 Declaration shows the present alloy in the T-351 temper has superior properties over standard AA2024 in T-3 temper. This Rule 132 Declaration also explains why AA2124 in T-851 temper would not have the presently claimed combination of properties. ASM Vol. 2 discloses AA2124 in T-851 temper. If this rejection is maintained, Applicant respectfully requests the Examiner to identify where ASM Vol. 2 discloses AA2124 in T-3 temper.

Product-by-process claim 38 further distinguishes over the references. As explained above, the present product distinguishes over that of the references.

Obviousness-type Double Patenting

Claims 1-23 and 37-39 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17, 28-30 and 35-42 of co-pending Application No. 10/195,483. A Terminal Disclaimer will be filed at an appropriate time.

Conclusion

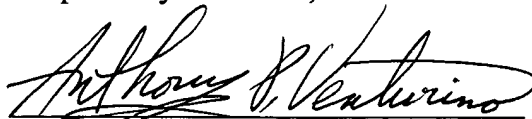
In view of the above, it is respectfully submitted that all objections and rejections are overcome. Thus, a Notice of Allowance is respectfully requested.

Date:

July 9, 2004

By:

Respectfully submitted,



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APV/bms

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